CLAIMS

What is claimed is:

1. A dual-channel power line communications (PLC) receiver, comprising: a first sensor configured to sense a first characteristic of a signal produced in a power line by a PLC transmitter and to provide a first signal representative thereof, wherein the first signal corresponds to one of a signal voltage and a signal current; a second sensor configured to sense a second characteristic of the signal produced in the power line by the PLC transmitter and to provide a second signal representative thereof, wherein the second signal corresponds to a line impedance at a frequency of the signal; and a processor configured to combine the first signal and the second signal to produce an output signal representative of a received PLC signal.

2. A receiver as in claim 1, wherein said first characteristic comprises a signal voltage level.

3. A receiver as in claim 1, wherein said first sensor comprises a transformer having a first winding configured to be coupled to a power line with which said receiver is associated.

4. A receiver as in claim 1, wherein said first sensor comprises an inline current sensor.

5. A receiver as in claim 1, wherein said processor is configured to evaluate a power level indicated by said first and second signals.

6. A receiver as in claim 1, wherein:

said first characteristic comprises a signal voltage level, and said first sensor comprises a transformer having a first winding configured to be coupled to a power line with which said receiver is associated.

7. A receiver as in claim 1, wherein the processor receives inputs from a secondary winding of a transformer.

8. A receiver as in claim 1, wherein the processor is configured to calculate a power level of the received PLC signal.

9. A receiver as in claim 1, wherein the processor receives inputs associated with the first and second characteristics.

10. A method for receiving power line communications (PLC) signals applied to a power line, comprising:

concurrently monitoring two PLC signal characteristics associated with the power line, wherein a first of the PLC signal characteristics corresponds to one of a signal voltage and a signal current, and a second of the PLC signal characteristics corresponds to a line impedance at a signal frequency;

evaluating a PLC signal power level, based at least in part on the two PLC signal characteristics, produced within the power line; and

producing signals, based at least in part on the evaluated PLC signal power level, indicative of the PLC signals.

11. A method as in claim 10, wherein the first of the two PLC signal characteristics corresponds to a signal voltage.

12. A method as in claim 10, wherein:

such producing comprises producing two signals respectively indicative of the two PLC signal characteristics; and

such evaluating comprises multiplying such two signals together.

13. A method as in claim 10, wherein the concurrent monitoring comprises receiving inputs from a secondary winding of a transformer at a processor.

14. A method as in claim 10, wherein the concurrent monitoring comprises receiving inputs associated with the two PLC signal characteristics at a processor.

15. An advanced metering infrastructure (AMI), comprising:

a communications receiver coupled to at least one power line to receive power line communications (PLC) signals carried by the at least one power line, said communications receiver being configured to evaluate a power level of PLC signals

applied to the at least one power line based on two concurrently monitored characteristics to reproduce the PLC signals coupled to said at least one power line, wherein said communications receiver comprises a dual-channel receiver with a first channel comprising a high-impedance PLC receiver configured to sense a signal voltage between two power lines, and with a second channel configured as a low-impedance current sensor to sense a signal current through at least one of the two power lines.

16. An advanced metering infrastructure as in claim 15, wherein said receiver is configured to evaluate said power level based on signal voltage and current levels associated with said at least one power line.

17. An advanced metering infrastructure as in claim 15, wherein the communications receiver is additionally configured to evaluate the power level of PLC signals based at least in part on a processor having inputs from the two concurrently monitored characteristics.

18. An advanced metering infrastructure as in claim 15, wherein the communications receiver is additionally configured to evaluate the power level of PLC signals based at least in part on a processor having inputs from a secondary winding of a transformer.

19. An advanced metering infrastructure as in claim 15, wherein the communications receiver is additionally configured to evaluate the power level of PLC signals based at least in part on a processor configured to calculate the power level of PLC signals applied to the at least one power line.

20. An advanced metering infrastructure as in claim 15, wherein the communications receiver is additionally configured to evaluate the power level of PLC signals based at least in part on a processor configured to calculate the power level of PLC signals and to provide a representation of the calculation on a single output line.

WHAT IS CLAIMED IS:

1. A dual-channel power line communications (PLC) receiver, comprising:

a first sensor configured to sense a first characteristic of a signal produced in a power line by a PLC transmitter and to provide a first signal representative thereof;

a second sensor configured to sense a second characteristic of the signal produced in a power line by the PLC transmitter and to provide a second signal representative thereof; and

a processor configured to combine the first signal and the second signal to produce an output signal representative of a received PLC signal.

2. A receiver as in claim 1, wherein:

said first characteristic comprises a signal voltage level; and

said second characteristic comprises a signal current level.

3. A receiver as in claim 1, wherein said first sensor comprises a transformer having a first winding configured to be coupled to a power line with which said receiver is associated.

4. A receiver as in claim 1, wherein said second sensor comprises an inline current sensor.

5. A receiver as in claim 1, wherein said processor is configured to multiply said first and second signals together.

6. A receiver as in claim 1, wherein:

said first characteristic comprises a signal voltage level, and said first sensor comprises a transformer having a first winding configured to be coupled to a power line with which said receiver is associated;

said second characteristic comprises a signal current level, and said second sensor comprises an inline current sensor; and

said processor is configured to multiply said first and second signals together.

7. A method for receiving power line communications (PLC) signals applied to a power line, comprising:

concurrently monitoring two PLC signal characteristics associated with a power line;

evaluating the PLC signal power level produced within the power line; and

producing signals indicative of the PLC signals.

8. A method as in claim 7, wherein such two signal characteristics correspond to a signal voltage and a signal current.

9. A method as in claim 7, wherein:

such producing comprises producing two signals respectively indicative of the two PLC signal characteristics; and

such evaluating comprises multiplying such two signals together.

10. A method as in claim 7, wherein one of the signal characteristics corresponds to one of a signal voltage and a signal current, and the other of the signal characteristics corresponds to a line impedance at the signal frequency.

11. An advanced metering infrastructure (AMI), comprising:

a power line infrastructure configured to transport alternating current from a source to a user location by way of at least one power line;

a source of powerline communications (PLC) signals coupled to said at least one power line; and

a communications receiver coupled to said power line, said communications receiver being configured to evaluate the power level of PLC signals applied to the at least one power line based on two concurrently monitored characteristics to reproduce the PLC signals coupled to said at least one power line.

12. An advanced metering infrastructure as in claim 11, wherein said receiver is configured to evaluate said power level based on signal voltage and current levels associated with said at least one power line.

13. An advanced metering infrastructure as in claim 11, wherein said receiver comprises a dual-channel receiver with a first channel comprising a high-impedance PLC receiver configured to sense a signal voltage between the power line mains, and with a second channel configured as a low-impedance current sensor to sense a signal representing the signal current through the associated at least one power line.